AMENDMENTS TO THE CLAIMS:

Claim 1. (Currently amended) An optical communication system for amplifying an optical signal propagating through an optical transmission line by using an optical amplifier in an optical repeater and emitting an amplified optical signal to an optical transmission line mounted at a back stage comprising:

a transmission line compensating device to generate control light which is input to said optical transmission line to produce ~~for producing~~ a Raman amplification effect within said optical transmission line outside of said optical repeater based on a control signal superimposed on said optical signal and input from said optical transmission line.

Claim 2. (Previously presented) The optical communication system according to Claim 1, wherein said transmission line compensating device is so configured as to send said control light to an optical transmission line mounted at a front stage outside of said optical repeater.

Claim 3. (Previously presented) The optical communication system according to Claim 1, wherein said transmission line compensating device is so configured as to send said control light to said optical transmission line mounted at said back stage outside of said optical repeater.

Claim 4. (Original) The optical communication system according to Claim 1, wherein said transmission line compensating device is mounted inside said optical repeater.

Claim 5. (Original) The optical communication system according to Claim 1, wherein said transmission line compensating device is separately and individually outside said optical repeater.

Claim 6. (Currently amended) The optical communication system according to Claim 1, wherein said transmission line compensating device comprises:

two or more control light sources to generate control light having a different wavelength and output; and

an optical multiplexer to multiplex said control light fed from said two or more control light sources.

Claim 7. (Currently amended) An optical communication system for amplifying an optical signal propagating through an upward transmission line or a downward transmission line by using a corresponding optical amplifier in an optical repeater and sending an amplified optical signal to an upward transmission line or a downward transmission line mounted at a back stage comprising:

transmission line compensating devices each operating for said upward transmission line or said downward transmission line and each generating, based on a control signal superimposed on said optical signal and input from said upward transmission line or said downward transmission line, control light which is input to said optical transmission line to cause ~~causes~~ a Raman amplification effect in said optical transmission lines outside of said optical repeater.

Claim 8. (Original) The optical communication system according to Claim 7, wherein said transmission line compensating devices are so configured as to send said control light to optical transmission lines mounted at a front stage.

Claim 9. (Previously presented) The optical communication system according to Claim 7, wherein said transmission line compensating devices are so configured as to send said control light to said optical transmission lines mounted at said back stage.

Claim 10. (Original) The optical communication system according to Claim 7, wherein said transmission line compensating devices are mounted inside said optical repeater.

Claim 11. (Original) The optical communication system according to Claim 7, wherein

said transmission line compensating devices are separately and individually mounted outside said optical repeater.

Claim 12. (Currently amended) The optical communication system according to Claim 7, wherein said transmission line compensating devices comprise:

two or more control light sources to generate control light having a different wavelength and output; and

an optical multiplexer to multiplex said control light fed from said two or more control light sources.

Claim 13. (Previously presented) The optical communication system according to Claim 7, further comprising:

common circuits each controlling simultaneously said transmission line compensating devices each operating to correspond to said upward transmission line or said downward transmission line.

Claim 14. (Currently amended) An optical repeater for amplifying an optical signal propagating through an optical transmission line by using an optical amplifier and sending an amplified optical signal to an optical transmission line mounted at a back stage comprising:

a transmission line compensating device to generate, based on a control signal superimposed on said optical signal and input from said optical transmission line, control light which is input to said optical transmission line to cause ~~causes~~ a Raman amplification effect within said optical transmission line outside of said optical repeater.

Claim 15. (Previously presented) The optical repeater according to Claim 14, wherein said transmission line compensating device is so configured as to send said control light to an optical transmission line mounted at a front stage outside of said optical repeater.

Claim 16. (Previously presented) The optical repeater according to Claim 14, wherein said transmission line compensating device is so configured as to send said control light to said optical transmission line mounted at a back stage outside of said optical repeater.

Claim 17. (Original) The optical repeater according to Claim 14, wherein said transmission line compensating device is mounted inside said optical repeater.

Claim 18. (Original) The optical repeater according to Claim 14, wherein said transmission line compensating device is separately and individually mounted outside said optical repeater.

Claim 19. (Currently amended) The optical repeater according to Claim 14, wherein said transmission line compensating device comprises:

two or more control sources to generate control light having a different wavelength and output; ; and

an optical multiplexer to multiplex said control light fed from said two or more control light sources.

Claim 20. (Currently amended) An optical repeater for amplifying an optical signal propagating through an upward transmission line or a downward transmission line by using a corresponding optical amplifier and sending an amplified optical signal to an upward transmission line mounted at a back stage or a downward transmission line mounted at a back stage comprising:

transmission line compensating devices each operating for said upward transmission line or said downward transmission line and each generating, based on a control signal superimposed on said optical signal and input from said upward transmission line or said downward transmission line, control light which is input to said optical transmission line to produce ~~produces~~ a Raman amplification effect within said upward transmission line or said downward transmission line outside of said optical repeater.

Claim 21. (Previously presented) The optical repeater according to Claim 20, wherein said transmission line compensating devices are so configured as to send said control light to an optical transmission line mounted at a front stage outside of said optical repeater.

Claim 22. (Previously presented) The optical repeater according to Claim 20, wherein said transmission line compensating devices are so configured as to send said control light to said optical transmission line mounted at said back stage outside of said optical repeater.

Claim 23. (Original) The optical repeater according to Claim 20, wherein said transmission line compensating devices are mounted inside said optical repeater.

Claim 24. (Original) The optical repeater according to Claim 20, wherein said transmission line compensating devices are separately and individually mounted outside said optical repeater.

Claim 25. (Currently amended) The optical repeater according to Claim 20, wherein said transmission line compensating devices comprise:

two or more control sources to generate control light having a different wavelength and output; ; and

an optical multiplexer to multiplex said control light fed from said two or more control light sources.

Claim 26. (Previously presented) The optical repeater according to Claim 20, further comprising:

common circuits each controlling simultaneously said transmission line compensating devices each operating to correspond to said upward transmission line or said downward transmission line.

Claim 27. (Currently amended) An optical communication system for amplifying an optical signal propagating through an optical transmission line, comprising:

an optical repeater comprising an optical amplifier and emitting an amplified optical signal to an optical transmission line mounted at a back stage; and

a transmission line compensating device for generating a control light which is input to said optical transmission line to produce a Raman amplification effect within said optical transmission line based on a control signal superimposed on said optical signal and input from said optical transmission line.

Claim 28. (Previously presented) The optical communication system according to claim 27, wherein said transmission line compensating device comprises:

a light receiving circuit which superimposes said control signal on a branched optical signal; and

a control circuit which receives said control signal superimposed on said branched optical signal from said light receiving circuit, and generates said control light, an operation of said control circuit being controlled by said control signal.

Claim 29. (Previously presented) The optical communication system according to claim 28, wherein said transmission line compensating device further comprises:

an optical branching circuit which branches a part of said optical signal propagating through said optical transmission line, and forwards said branched optical signal to said light receiving circuit; and

an optical multiplexer which sends said control light to said optical transmission line.

Claim 30. (Previously presented) The optical communication system according to claim 29 wherein said control circuit comprises a plurality of control light sources which generate a plurality of control lights, said optical multiplexer multiplexing said plurality of control lights.

Claim 31. (Previously presented) The optical communication system according to claim 27, wherein said transmission line compensating device is optically coupled to said optical amplifier of said optical repeater.

Claim 32. (Previously presented) The optical communication system according to claim 27, wherein said transmission line compensating device receives said optical signal from said optical amplifier in said optical repeater.

Claim 33. (Previously presented) The optical communication system according to claim 27, wherein said optical amplifier in said optical repeater receives said optical signal from said transmission line compensating device.

Claim 34. (Currently amended) A transmission line compensating device in an optical communication system, comprising:

a light receiving circuit which superimposes a control signal on a branched optical signal; and

a control circuit which receives said control signal superimposed on said branched optical signal from said light receiving circuit, and generates a control light, an operation of said control circuit being controlled by said control signal,

wherein said control light is input to an optical transmission line to produce ~~produces~~ a Raman amplification effect within said ~~an~~ optical transmission line based on a control signal superimposed on said optical signal and input from said optical transmission line.

Claim 35. (Previously presented) The transmission line compensating device according to claim 34, wherein a wavelength band of said control light is different than a wavelength band of said optical signal.

Claim 36. (Previously presented) The transmission line compensating device according to

claim 34, wherein said optical signal comprises a plurality optical signals and said control light comprises a plurality of control lights which are associated with said plurality of optical signals, respectively, and

wherein said Raman amplification effect calibrates a difference in outputs from said plurality of optical signals.

Claim 37. (Previously presented) The transmission line compensating device according to claim 34, wherein said Raman amplification effect compensates for a loss spectrum exhibited by said optical transmission line.

Claim 38. (Previously presented) The transmission line compensating device according to claim 37, wherein said loss spectrum is compensated by adjusting said loss spectrum such that levels of said plurality of optical signals are optimized.

Claim 39. (New) The optical communication system according to Claim 1, wherein said Raman amplification effect is produced by propagating said control light through said optical transmission line.

Claim 40. (New) The optical communication system according to Claim 1, wherein said Raman amplification effect is produced while said control light is propagated through said optical transmission line.